

Deepfake Literacy of the Journalists and Initiatives of Media Organization in Bangladesh

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Abstract

Deepfake has become a recent concern in the field of journalism. Though earlier deepfake was mainly used in porn industry nowadays the unscrupulous people used it to provide false and fabricated information. Artificial Intelligence Algorithm is being used to make deepfake video. Journalism is becoming challenging in Bangladesh. Government has made several laws and some sections of those laws are playing a vigorous role against free fair journalism. The aim of this study is to find out the deepfake knowledge of the journalists in Bangladesh. The study interviews 100 journalists of 50 media outlets including television, print and online media. Among the journalists 80 per cent did not know about deepfake and those who heard about it earlier among them only 9 percent got knowledge from their respective organization. A good number of journalists did not get proper training on deepfake. This study concluded by proposing few recommendations to teach the journalists about deepfake.

Keywords: Deepfake, Bangladesh, Journalist, Deep learning, Artificial Intelligence, Technology

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Introduction

According to June 11, 2018, BBC report based on Whatsapp viral video, two people in India were attacked by mob as they mistook them as kidnappers. The video was not even real as it was an edited clip of a child safety film, shot in Pakistan.

The technology is being used by some to make lies seem right, hence making it almost impossible for the people to distinguish between real and false content. Unfortunately, our age is an era of lies, deception, and fake news, and threatening enough to petrify the researchers.

Since fabrication, as well as manipulation of analog and digital fakes, are not new. Deepfake is created by artificial intelligence (AI), in particular, deep neural networks (DNNs) can generate highly falsified and deceitful contents. These are hyper-realistic, well-crafted videos that can create illusions of a person's presence, or an activity that didn't occur in reality.

In these videos, the face of the target audience is replaced by the donor, while retaining the former's facial expressions and head poses. Faces are strongly associated with the identity of an individual, and the trickery is alarmingly successful. Hence, if it is misused, it can lead to political, social, financial and legal repercussions due to its apparent credibility. They serve to augment the rate of online misinformation.

There are also several potential threats from the generative media ranging from making an obscene video of an individual to state leaders making inflammatory comments, an executive disapproving the company's performance, or someone impersonating as a family member in a group chat.

The first AI-generated fake video came into limelight in 2017, when an anonymous Reddit user named deepfake began posting synthetic adult videos of celebrities using DNN based face-swapping algorithm. The free sharing of the computer code from the Deepfake Reddit account and rapid growth of DNNs has made the process easier, cheaper and faster. It has been commercialized and mainstreamed by the freely available software on GitHub, such as FakeApp, Dfaker, faceswap and DeepFaceLab.

Simultaneously, there are multiple startups such as Synthesia and Canny AI, which are making tools for profit which are capable of making deepfake videos. Moreover, online services are popping up, which can generate AI-generated impersonating videos.

The first targets were the famous people, as there was infinite availability of their images, and videos, and their faces easily got transposed into others. In 2017, when Obama's video was deepfaked with an impressive use of lip-synching technology based on the existing audio footage, it set off alarm bells all over the world.

This paper has discussed the deepfake technology and its possible consequences in terms of Journalism. Since it is a new term, a descriptive analysis method is being used for the research. The main objective of this paper will be to highlight a few of the challenges, and the importance of educating the society, especially journalists about it.

Deepfake

The notion of deepfake is a new paradigm in the media industry. Earlier it was used in film or porn industry, but now it has been using as an instrument to swindler with the people. Deepfake refers to a video that has been

manipulated and swap of a face of one person to another. Sometimes face also manipulated but the term widely uses in videos. Deepfake is such kind of video which is created to give false and fabricated information using the face of another specially the well-known person. Deep learning and Artificial Intelligence are being used to create such kind of videos.

Deepfake is a video which is manipulated by sophisticated machine-learning techniques which seems to be a genuine, but fictitious, images and sounds. Deepfake videos can make it possible to understand people about a video or did something that they did not. Deepfake or deepfake video is acceptable, but it must be explained on first reference (Schuman, 2021)

Deepfake is form of videos where a person's face has been persuasively swapped by a modern technology, which looks like a second person. They came to prominence in 2017 on the online community called r/deepfakes subreddit, whose members began sharing pornographic videos that appeared to feature popular female celebrities (Biggs & Moran, 2021). The community was aptly named r/deepfake, and this is where the first face-swapping videos using the Deepfake algorithm started circulating (Fikse, 2018)

This concept come to the light broadly when the face of the Barak Obama, the former president of The United State of America were used to give a fabricated speech about Donald Trump the than president of USA. Most of the well-known faces including Mark Zuckerberg, Donald Trump, Nancy Pelosi, the speaker of the US House of Representatives has become the victims of deepfake. The unscrupulous people always attempt to take advantage personal benefits using deepfake videos.

Objectives of the Study

The objectives of the studies are:

- To provide a vibrant concept on deepfake among the journalist.
- To know the deepfake literacy of the journalists in Bangladesh.
- To know the initiative taken by the media organizations to teach their employees on deepfake

Rationale and Significance of the Study

Technology has forced the journalist to perform their duties more consciously. Although technology is considered as a blessed for journalism but some time another side of the coin becomes worse for the journalist. As the concept of deepfake is very new, most of the journalists in Bangladesh do not know how to deal with this new challenging issue. But deepfake has a big impact on the society. Sometime it's undermined the faith of the people and creates copious mayhem among the people. The more insidious impact of deepfake, along with other synthetic media and fake news, is to create a zero-trust society, where people cannot, or no longer bother to, distinguish truth from falsehood. And when trust is eroded, it is easier to raise doubts about specific events (Sample, 2020). During this work none articles had been found on Deepfake literacy of the journalist in Bangladesh and initiatives taken by the media organizations. Journalism is under pressure in this South Asian country. That's why the journalist should know all the side of technology to make its work cooler. This article will help to know the journalist about deepfake and also help the employer to arrange training on deepfake.

Literature review

Deepfake has become a new threat both for the porn and media industries. Giving thanks to the modern technology especially artificial intelligence a number of fraudulent people are using the face of the famous model; some fraudulent individuals create porn videos to produce more money within a short time. The majority of deep fakes that circulate online today are pornographic, yet public attention typically centres on 'political' deep fakes (Maddocks, 2020).

Though deepfake is good for the film industry, but now it has become a vibrant tool to pester the rival or any individuals. A study was conducted on 'Artificial Intelligence and New Level of Fake News', where the result showed that the videos made with deepfake were hard to tell if they were fake. Other than that, access to software implementing deepfake is pretty easy to get; the example is faceswap, an open-source project that is available and easy to use. (Nazar & Bustam, 2020)

Social media plays a mood of significant medium to spreads deepfake videos, and a lot of the fake videos have emerged over the last two years in social media. As a society, we are not prepared to deal with the advent of deepfake at any level. That we have not witnessed any severe impacts so far is due to their early stage of improvement, that shows limitations to address the issue, a mixture of technology, education, training, and governance which are urgently needed (Karnouskos, 2020).

From the beginning, the experts are trying to develop a deepfake detection method. Yuezun and others conduct a comprehensive evaluation of deepfake detection methods and datasets to demonstrate the escalated level of challenges posed by Celeb-DF which contains 5, 639 high-quality deepfake videos of celebrities generated using an improved synthesis process (Yuezun Li. et al, (2020).

Siwei Lyu discussed high-quality fake videos and audios generated by algorithms have started to challenge

the status of videos and audios as definitive evidence of events (Lyu, 2020). He highlights a few of these challenges and discusses different types of deep fakes with probable solutions to detect deep fake videos.

Christopher Whyte researched the impact of deepfake on the ability of populations to determine the origination, credibility, quality and freedom of information (Whyte, 2020). In the paper, he argued that deepfake should be thought of more as an evolution than a revolution in disinformation techniques.

Development of new technology has a profound impact on journalism. Although most of the time people receive the positive impact, sometimes worse side are also be taken. Like most new technologies, deep fakes caused a great moral panic (Faragó, 2019, p. 14). Erkam Temir (2020) examined the general social problems caused by deep fakes (Temir, 2020). Results revealed that deepfake is going to harm society, and undermining journalism will cause immense loss.

Due to deepfake, it is highly challenging to find out the real and fake videos. Hence people have low trust in social media videos. Cristian Vaccari and Andrew Chadwick researched to observe the impression of Synthetic Political Video on Deception, Uncertainty, and Trust in News. They concluded that people are more likely to feel uncertain than to be misled by deep fakes, but this resulting uncertainty, in turn, reduces trust in news on social media (Vaccari & Chadwick 2020).

In a study Jan Kietzmann and others propose the ‘real’ framework to manage deepfake risks: Record original content to assure deniability, Expose deep fakes early, Advocate for legal protection, and Leverage trust to counter credulity (Kietzmann..et al 2020). They explained what deepfake are and how they are getting produced using a deep network structure called an autoencoder which, much like an artificial artist, learns to concentrate on characteristics of a person’s face to generate previously nonexistent images (P. 11).

Journalists deal with the news, photos and videos, so it is quite important for them to learn about deepfake, but unfortunately there are not many opportunities for them a country like Bangladesh as well as others underdeveloped countries. A study was conducted to propose to develop a robust and an intuitive system to help journalists detect deep fakes (Sohrawardi, Saniat Javid et al..2020). The study explores the requirements of national as well as international journalists to formulate a tool for the detection of deep fake videos (P.5).

Four researchers describe a technique to detect deep fake videos by exploiting the fact that the dynamics of the mouth shape – visemes – are occasionally inconsistent with a spoken phoneme. They focus on the visemes associated with words having the sound M (mama), B (baba), or P (papa) in which the mouth must completely close to pronounce these phonemes (Agarwal et al 2020). They claimed that their method could detect state-of-the-art, lip-sync deep fakes (P.7).

Luisa Verdoliva pointed out in a study that so-called deep fakes can be used to manipulate public opinion during elections, commit fraud, discredit or blackmail people. From the forensic analyst's point of view, the study also emphasized on the emerging phenomenon of deep fakes and modern data-driven forensic methods (Verdoliva, 2020).

Sometimes deepfake are created to harass the women especially the models and celebrities. In porn industry, it is used to create fake adult videos using the face of the celebrities. Emily van der Nage examined the general phenomenon of deep fake porn as a misogynistic way to control women’s images (Nage, 2020). He presented some lessons from photographic studies about manipulated images before turning to a case study that directly addresses image consent: the verification system used on the bulletin board thread Reddit Gonewild.

A research article showed how journalists frame deepfakes as a destabilizing platform that undermines a shared sense of social and political reality, enables the abuse and harassment of women online, and blurs the dichotomy between real and fake (Segal & Oppenheim, 2020). The article also provided broader practical and theoretical insights about AI content regulation and ethics, accountability, and responsibility in digital culture.

Research Methodology

The research area of the study is Bangladesh. Ministry Information’s data reveals that there are 214 daily newspapers and 28 private TV channels in Dhaka (Anisul Islam.. et al 2020). Based on Random sampling the study involved 50 online, print and television media house. The study incorporated 100 journalists by selecting one reporter and one sub-editor from each media house. The reporter included special correspondent, senior staff reporter, staff reporter, junior reporter, cub reporter. Sub-editor encompassed senior news editor, news editor, joint news editor, deputy news editor, senior sub-editor, sub editor, newsroom editor. However the study did not try to maintain gender equality. For privacy purpose, the paper did not reveal their names and details identity.

Analysis of the Survey

The survey has been conducted both online and offline. Among the participants 60 answered through online and rest are in offline. Those who answered through online, the questionnaire was sent to them and it was described elaborately who had faced any complications to fathom any questions. Besides the close-handed questions the journalist also got the opportunity to write their opinion regarding deepfake.

Heard about deepfake

Among the participants only 20 journalists have heard about deepfake. The rest 80 journalists do not heard about it before. The number is quite shocking as the modern technology is evolving tremendously. Without vast knowledge it is relatively challenging to perform the duty of a journalist like a country in Bangladesh where multiple laws play as an antagonist role in journalism. (Figure-1)

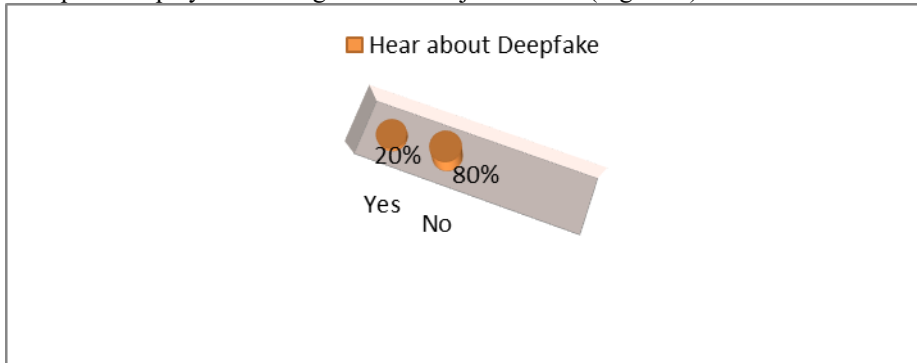


Figure-1: Heard about deepfake

Role of Media House

Most of the participants said their respective organization did not take any initiative to teach them about deepfake. Only 9 per cent journalists gave the affirmative answer while rest 91 per cent did not heard it from office. Those who got the opportunity to learn about deepfake from their office all of them were given only short discussion, not any training to identify deepfake videos. (figure2.1, 2.2)

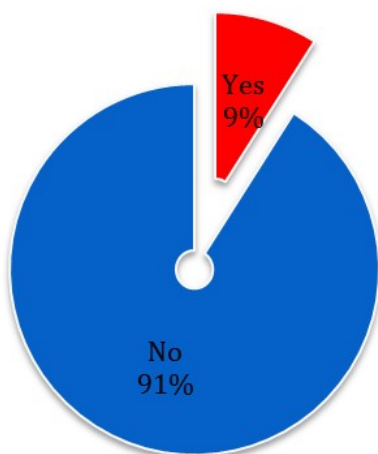


Figure- 2.1: Organizational initiative to teach

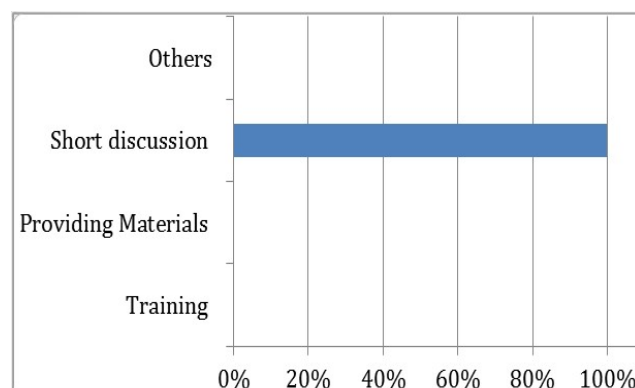


Figure-2.2: Types of step taken by organization

Self-initiative to learn deepfake

Most of the journalists who took part in the survey did not try to learn about deepfake by their individual initiative. Data showed that only 8 per cent journalists tried to learn about deepfake rest 92 per cent did not try to learn it. To identify the action to learn about deepfake the participants were given four options to answer. Among the participants who tried to acquire knowledge 25 per cent read book. Same number read article from online and rest 50 per cent watched videos from YouTube.

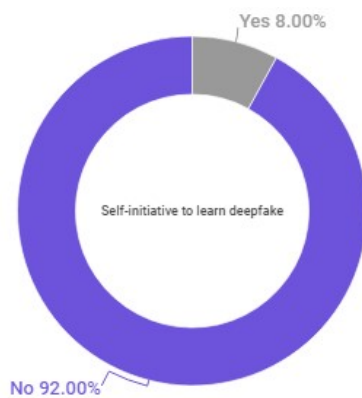


Figure 3.1: Number of self-initiative to learn deepfake

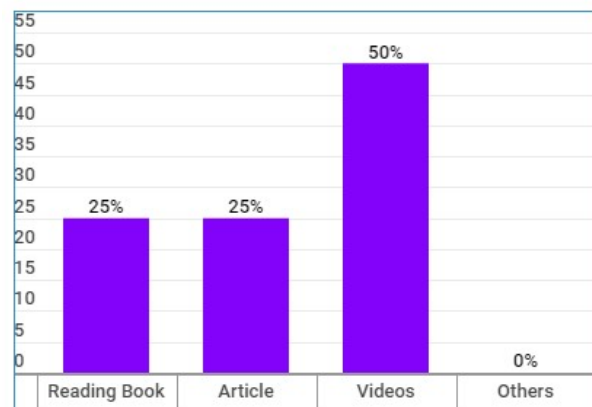


Figure 3.2: Action to learn deepfake

Institute to teach deepfake

The journalists were asked that if they have heard any institutes in Bangladesh which teaches how to identify or tackle deepfake. All of them gave negative answer. According to them there is no any such kind of institutions in Bangladesh though it is crying need to make the journalists more handsome to tackle deepfake videos.

Threat of deepfake on Journalism

The journalist who took part in the survey all of them believe there are plenty of threats of deepfake on Journalism. They were given openhanded question to write the conceivable threat of deepfake on journalism. Among the journalists 80 per cent believe if the any deepfake video published through any professional media it would be created anarchy in the society while 100 per cent answered that credibility of media will be affected. A good number of participants also said publishing deepfake without checking the journalist could be lost job. A few number also said the journalist could be penalties for it.

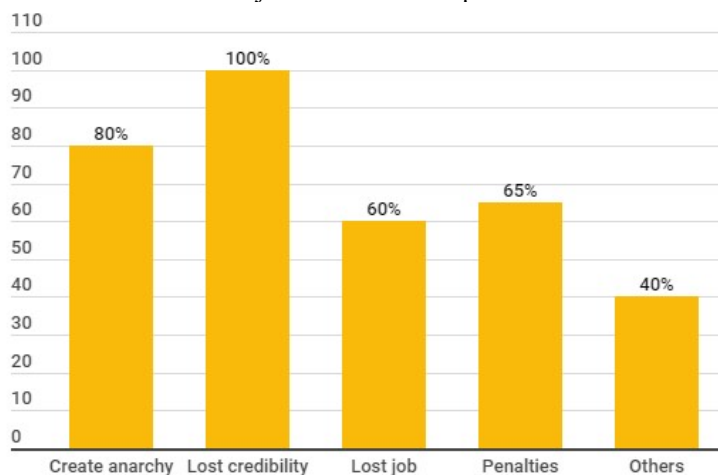


Figure-4: Probable threat of deepfake on journalism

Deepfake detection method

Though it is quite important to know the deepfake detection in this modern era none of the journalists (100 per cent) among the participants know about it. The participants also believe that Facebook plays a big role to spread deepfake contents. Among the journalists 81 per cent believe that Facebook acts as a catalyst for deepfake contents while rests 19 per cent do not think so.

Solution to stop deepfake

The journalists who took part in the survey were given four options how to stop the spread out of deepfake contents. They were also given to choose more than one options. Among them 25 journalists ruminates law can stop the spread of deepfake, 75 believe proper monitoring can do it while 65 ponder that deep knowledge on deepfake is the solution to stop it. The highest 95 people believe that proper initiative of the media organizations can play the most significant role to stop the extent of deepfake. 20 people also believe other initiatives should be taken to stop spreading of deepfake videos.

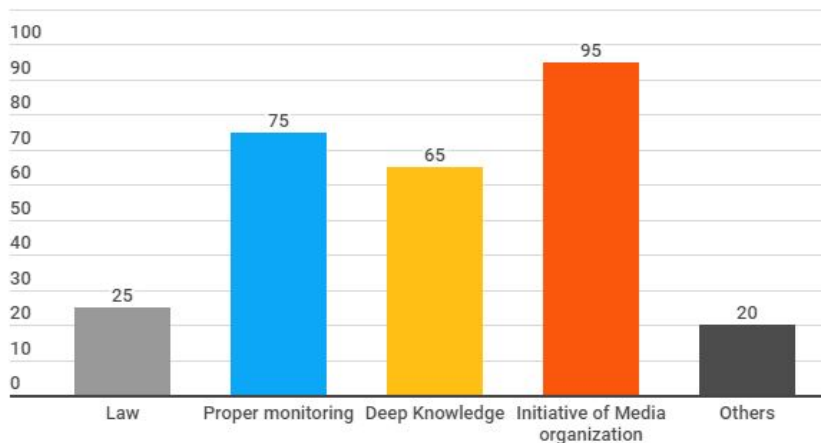


Figure- 5: Solution to stop spreading of deepfake

Possible best way to learn about deepfake detection and prevention

The journalists think initiatives of the Journalism school, short courses and proper training arranged by the media organization are the best way to learn about deepfake videos which help to identify and prevent spreading of it. Among them 15 per cent answer on behalf of journalism school, 25 per cent speak on short courses. The majority 60 per cent believe that proper training arranged by the media organization can play a tremendous initiative to learn properly about deepfake technology.

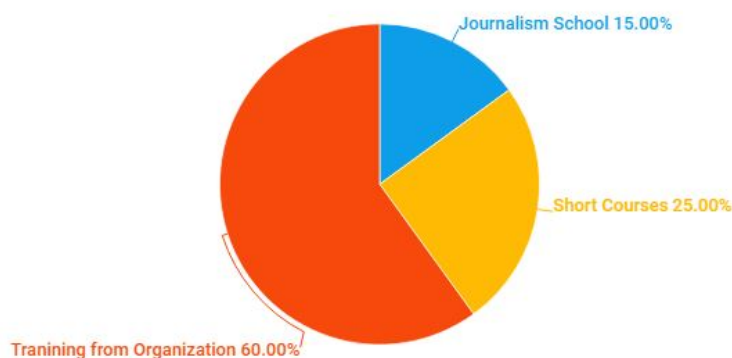


Figure-6: Possible best way to learn about deepfake

Importance of Regulatory body

A regulatory body can play a noteworthy role to tackle deepfake. Among the participants in this survey 100 per cent have given their opinion on the support of regulatory body to protect deepfake. The participants also suggest forming the regulatory body with the government employees, media personnel, and with the concern people.

Result and Discussion

Bangladesh is country where multiple laws are made hindrance for free and fair journalism. In this South Asian country journalists always are on the surveillance of the government. As modern technology is an upward trend here so challenges are swelling day by day. But the shocking news is that most of the journalists do not concern about the adverse impact of technology. Among the participants of this survey only 20 per cent heard about deepfake before this survey and those who have heard do not know how to detect deepfake videos though they are fulltime journalists in different print, online and TV media outlets. The media organizations are also not conscious about deepfake as in this survey 91 per cent journalist did not receive any vive on it from their respective media outlets. Rest 9 per cent were confined on short discussion on deepfake not any proper training. Those who learn about deepfake only 8 per cent journalists tried to learn about deepfake by their individual initiatives while rest 92 per cent did not try to learn it. Those who want to learn about deepfake 25 per cent read books, 25 per cent read article and others 50 per cent watched videos on deepfake. However they did not try to learn it practically. The most shocking news is that none of the participants know about any institutions where they can learn about deepfake. Bangladesh a country where more than thousand media outlets are still running but here is no any proper institutions to learn and tackle deepfake though it is crying need to do journalism properly. All of the journalist who took part in this survey mention of deepfake threats. Among them 80 per cent

told about anarchy in the society while 100 per cent answered that credibility of media will be affected. Where 60 per cent believe the liable journalist involve with deepfake article publishing will be sacked and 65 per cent told about punishment. Among the journalists 81 per cent believe Facebook acts as a facilitator for deepfake contents while rests 19 per cent do not think so. To stop spreading deepfake 25 journalists told about law, 75 told about proper monitoring while 65 think deep knowledge on deepfake can stop it. 95 journalists argued that media organization's initiative can stop the extent of deepfake. The participants also suggested different possible way to learn on deepfake. Among them 15 per cent suggested for journalism school, 25 per cent speak on short courses while 60 think initiative taken by the media organization can play a vital role to teach the journalist on deepfake. All of the participants also urged to form a regulatory body to tackle deepfake.

As deepfake is an emerging threats for journalists across the world Bangladesh is not out of this. Since last few decades' journalists are facing lot of hurdles in this South Asian country. Several laws are also made to control the cyber space and among them most the laws are using to control the media in Bangladesh. Within 26 months after approving the Digital Security Act in Bangladesh around 900 cases were filed where 40 per cent against the journalists (Daily Star, 2022). The journalists should be concerned while publishing anything from social media or online videos. The speech must be checked and cross checked from the concern authority before publishing it. Without any doubt deepfake knowledge among the journalists in Bangladesh is almost zero. The media organizations should come forward to teach their employees about deepfake for the sake of their staffs and their institutions also.

Conclusion and Recommendations

Media industries are growing rapidly in Bangladesh. In the last decade, media in Bangladesh has undergone remarkable growth and changes in terms of expansion and increase in more young journalists (Monty, 2011). Journalism department in different private and public universities is also expanding. There are few autonomous institutions in Bangladesh also where different courses related to journalism are being taught. But the problem in Bangladesh is that most of the institutions are theory based. Only few institutions teach on practical education and those are confined with audio, video and text. Multimedia journalism is getting popular in this South Asian country. But the problem is that journalism industry in Bangladesh is not technologically sound. Most of the journalists here are not aware about fact checking, uses of artificial and deepfake. Even the media outlets are also far behind using of latest technology. Deepfake is a new concern in the field of journalism. Artificial Intelligence is being used to create deepfake videos. In open eyes it is quite difficult to find out deepfake. The journalist should be conscious about deepfake and they must be trained up properly to handle deepfake. Otherwise they could be faced plenty of hurdles to execute their job without free and fair.

The journalism department should include a course on technology journalism where latest technology should be taught the students.

The media organization can arranged proper training on deepfake for the sake of their respective institutions and staffs. It also needs to do journalism without free and fair.

The government also can take proper initiatives to teach the media workers on deepfake with a look forward to improving the quality of journalism in Bangladesh.

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